

# A Longitudinal Study of the Readability of the Chairman's Narratives in Corporate Reports: Malaysian Evidence

Azhar Abdul Rahman

## II. PRIOR RESEARCH

### A. The Importance of Readability

Many researchers generally agree that ease of understanding is one of the most important characteristics of effective reporting [2], [16]-[18]. Effectiveness is viewed as the transmission of the desired message to the intended user in an accurate and understandable way [19]-[21]. Smith and Taffler argue that a message which is not understood is useless either for decision-making or for monitoring the stewardship function [4]. Haried opines that a 'semantic' or 'technical' communication breakdown will have occurred [22], [23]. These breakdowns are very common [24]-[27]. Most researchers also agree that the terms readable and understandable are generally viewed as being very closely related [20], [21], [28]. Veritably some researchers (e.g., Adelberg) have gone so far as to treat them as synonymous [29].

Brennan, Pierce, and Guillamon-Saorin identify at least 40 annual report readability studies in their review of literature covering the period from the first readability study in 1948 by Pashalian and Crissy, through to research published in 2007 [30], [10]. The fundamental question these studies address is "how difficult are annual reports to read?" All the studies find the reading level to be difficult or very difficult with the implication that directors are failing to communicate with significant numbers of readers [31].

Out of the above 40 studies, 25 studies assume that readability reflects understandability [10]-[11], [21], [32]-[33], [35]-[42]. All 25 studies used readability tests with 19 based on Flesch's method.<sup>1</sup> Overall, these studies concluded that corporate reports were written in an academic or scientific style which the unsophisticated reader would find difficult, or very difficult, to read. Around 1960, it was estimated that only 9% of Malaysian citizens had attained an educational level sufficient to read the very difficult material (see Table I). 17% had attained the difficult level. Since then (according to OECD) the average years of education received has increased, thus presumably raising educational attainment [43]. However, any improvement in user understanding may be countered by the evidence available, albeit limited, which suggests a decline in readability over the period. Three American studies tested readability of corporate reports from

<sup>1</sup>Seventeen used the conventional Flesch test, and two used the Fan-Jenkins Paterson test, a simplified, but still highly reliable Flesch test [76]-[77]

**Abstract**—This paper examines the readability of the chairman's narratives, as determined by the Flesch score, of a Malaysian public listed company's corporate reports from 1962 to 2009. It partially supports earlier studies which demonstrated that corporate reports were difficult to read, and had shown very negligible decrease in difficulty over time. Net profit to sales and readability was significantly positively correlated but number of financial statements was significantly negatively correlated with readability.

**Keywords**—Chairman's narratives, corporate communications, readability, longitudinal.

## I. INTRODUCTION

THE primary objective of financial reporting is to provide useful information to users to enable them to make an informed judgment for decision making purposes. As such, the communication of accounting information to external users is of fundamental importance to published accounting reports (e.g., [1]-[3]). Consequently, some accounting researchers have investigated alternative methods of communication for the annual report, such as Pictics ([4], [5]), videos ([6]) and the employee report ([7]-[9]). Other accounting researchers (e.g., [10]-[15]) have used readability as a measure of the effectiveness of written corporate communication.

The purpose of the present study is to evaluate the readability of one firm's corporate reports. It uses the Flesch score, a readability technique. The two main research objectives were to determine:

- 1) Whether the readability of the chairman's narratives have changed over time, and
- 2) Whether any of six factors—financial performance, turnover, different chairmen, change in operation, merger activity, change of status—have been key influences on readability.

The paper is structured as follows. The second section reviews existing readability literature and details the development of hypotheses. The data collection methods and research design are then presented in section three. The fourth section presents an analysis of the results. The final section discusses the results and draws conclusions.

A. A. Rahman is an Associate Professor with the School of Accountancy, College of Business with the Universiti Utara Malaysia, Sintok, Kedah, Malaysia (phone: 6-04-928-7229; e-mail: azhar258@uum.edu.my).

the same firms in 1948, 1961 and 1977 [10], [32], [34]. They discovered a sharp decline in the corporate report readability.<sup>2</sup> Lewis, Parker, Pound and Sutcliffe, in their study over a four year period found that readability did not improve, and that the Flesch index suggested a slight increase in the difficulty of the language used [11]. Similarly, Jones examined the readability of the chairman's narratives of a UK company from 1952 to 1985 and found that readability had declined significantly [12]. He also examined the relationship between readability and some company's variables and found that turnover had influenced readability (i.e., as turnover increased over a period, readability also declined).

These five studies were the only ones which investigated the trend of readability of corporate reports over time, and even they have major weaknesses. The three American studies tested only three out of 26 years. Lewis, Parker, Pound and Sutcliffe in 1986 examined only four years and concentrated on employee, not shareholder reports [11]. Only one study by Jones has investigated a particular company (in the UK) over a 34-years period [12].

There were very few research conducted on Asian countries like Malaysia. Three of the twenty-five studies were British: there were twelve American, six Australian, two New Zealand and two Canadian. The different legal and economic situations in these countries may impair the applicability of their findings to the Malaysian environment. Only two Malaysian studies have been found so far. The first study by Courtis and Hasssan examines reading ease between the English and Chinese versions of 65 corporate annual reports in Hong Kong and the English and Malay versions of 53 annual reports in Malaysia [74]. They employed the Flesch and Yang formulas for Hong Kong and Flesch and Yunus formulas for Malaysia. Results provide some tentative impression that the indigenous language version is easier to read than the English-written counterparts. In addition, evidence suggested that the English passages in Malaysian annual reports are easier to read than the English passages in Hong Kong annual reports. A second study examines the readability of Corporate Social Responsibility (CSR) disclosure for a sample of listed companies in Malaysia [75]. The study employs readability formulae and finds that the extent of syntactic complexity making it difficult to comprehend the CSR communication of the listed companies varies from very difficult to fairly difficult. There also tested the relationship between readability and companies' performance and found that management of poorly performing companies deliberately chose difficult language in CSR communication which supports the obfuscation hypothesis.

### *B. Development of Hypotheses*

A longitudinal study of the readability of the chairman's reports of a Malaysian company would overcome some of the weaknesses in the previous studies. The chairman's report was selected because several studies have shown that it is the most

widely read, and best understood, part of the corporate report [25], [42], [44]. It is also the main section of the annual report written in a narrative manner, and therefore is quite appropriate for readability testing.

Rothmans of Pall Mall (Malaysia) Berhad, a medium sized company<sup>3</sup> was selected for the research because it is essentially a well established one product firm whose business profile has remained largely the same throughout the period. Rothmans kindly allowed access to archive material, which included a set of corporate reports containing a section signed by the Chairman, dating back to 1962. By analysing these reports, more evidence can be gathered to substantiate the previous tentative findings on the trend of readability overtime, as set out below.

Hypothesis 1: The annual corporate reports have been difficult or very difficult to read over the last forty-eight years.

Hypothesis 2: The readability of the annual corporate reports has declined over the last forty-eight years.

By studying one firm over time, it would allow the researcher to investigate a topic which has not been explored in previous research—factors affecting the readability of corporate reports. Previous research into contiguous areas of financial communication, a background study of Rothmans, and logic were used to select factors for testing.

Several studies have found a significant positive relationship between a firm's financial performance and the level of difficulty of its disclosures [38], [45], [46]. Possibly, for a poor performing company, the management consciously or unconsciously reports its results in a more difficult writing style. Accordingly Hypotheses 3A and 3B were developed.

Hypothesis 3: The level of readability of the chairman's narratives was positively correlated with the firm's financial performance as measured by

(A) net profit to sales

(B) return on capital employed.

The growth of the firm (measured by turnover and number of financial statements), might also influence readability level. As a firm grows in size, it becomes more complex, and this may be reflected in its accounts, which will increase in terms of the number of accounts that need to be prepared, hence becoming more sophisticated and difficult to read. As such, Hypotheses 4A and 4B were developed.

Hypothesis 4A: The level of readability of the chairman's narratives was negatively correlated with turnover.

Hypothesis 4B: The level of readability of the chairman's narratives was negatively correlated with the number of financial statements.

Further, the identity of the chairman himself might also influence readability. The chairman's narrative is essentially a review of the corporate performance for the current financial year. This section of the report generally varies from two to four pages in length and it is generally the most unstandardised, and is unaudited. At Rothmans the last two

<sup>2</sup>Their mean Flesch score fell from 31 to 29 to 16 indicating a decline in readability from difficult to very difficult (see Table I for an explanation of the Flesch score).

<sup>3</sup>In the year ended December 2009 it had a turnover of RM3,923 million, an operating profit before tax of RM1,005 million, and the average number of employees was 1,044.

chairmen put the substance on a preliminary draft prepared by the managing and finance directors. This might well have given them a chance to express their own personality, through their writing style. Thus:

Hypothesis 5: The level of readability of the chairman's narratives was different under different chairmen.

A major change in the users of the corporate report might also be important. In Rothmans this occurred in 1974 when the Kuala Lumpur Stock Exchange (KLSE) was set up (now is known as Bursa Malaysia). Starting from 1975, all listed firms were required to submit their annual reports to KLSE. Previously, submission of the annual reports was done on voluntary basis. Would a significant change in the style and orientation of the chairman's message occur? Will it become more complex because of the wider audience, or would there be an effort to put across a simpler message? Thus:

Hypothesis 6: The level of readability of the chairman's narratives was affected by a significant change in the form of the company.

The next factor considered is specific to Rothmans. In 1981, a scheme of arrangement was set undertaken to separate the operation of Rothman of Pall Mall (Singapore) Ltd from Rothman of Pall Mall (Malaysia) Ltd. Therefore, it is worthwhile to find out whether the separation of the two entities would affect the way the chairman's statement was composed. Since Rothman of Pall Mall (Malaysia) Ltd only needs to report its activities in Malaysia, it is expected that the readability of the chairman's statement will become much easier to read than before because the scope of business operation was much narrower. As such, the next hypothesis is:

Hypothesis 7: The level of readability of the chairman's narratives was significantly affected by the change in its scope of operation.

The final factor considered is quite unique to Rothmans. In 1998, a merger scheme was undertaken to merge the business entity of Rothman of Pall Mall (Malaysia) Berhad with Malaysian Tobacco Company Berhad to form a new entity known as the British American Tobacco (M) Berhad. Therefore, it is prudent to find out whether the formation of the new entity would affect the way the chairman's statement was composed. Since a new business entity was formed from the merger exercise, it is expected that the readability of the chairman's statement will become much easier to read than before in order for the company to project its new image to potential investors. As such, the next hypothesis is:

Hypothesis 8: The level of readability of the chairman's narratives was significantly affected by a change in reporting entity.

### C. Choice of Readability Formula

The major credible methods of analysing readability use test readers or readability formulas. Test readers were ignored not only because the process is too laborious, but also because they often disagree on their rankings of comprehensibility [47], [48]. Readability formulas provide an easy, objective and

reliable alternative. However, there is an abundance of such formulas. For example, Klare identified that by 1960 there were at least 30 formulas plus variations in existence [47]. Since then, new formulas have been invented [29].

The main features of the various formulas were carefully evaluated and the revised Flesch Index Flesch was found most suitable for this study [28]. This was due to its reliability, validity and practicability [20], [47]. Its frequent use in prior studies also facilitated inter-study comparison. Most readability formulas are based upon syntactic complexity and features of words such as syllables [49]. The Flesch readability score itself uses a combination of sentence length and syllable count. It is expressed as

$$206.835 - ((L \times 1.015) + (S \times 0.846))$$

where L is the sentence length, and S is the mean syllables per 100 words. The lower the score the more difficult the passage is. Once the score has been computed, it is compared with a predetermined table (see Table I), which gives a description of its readability. Flesch originally invented his test, using 363 passages out of McCall Crabs 'Standard test lessons in reading', to help evaluate elementary reading abilities. However, research has shown that the formula is valid for adult material. For instance, Swanson and Fox (1953) showed that readability indices could predict differences in comprehension between different versions of employee newspapers [50]. A correlation has also been found between student comprehension and the Flesch formula of 0.94 [51]. Since then, it has been widely used to test adult materials.

### III. SAMPLING METHODOLOGY

The sampling methodology employed followed the steps and grammatical guidelines laid out by Flesch [28]. Two 100 word samples were taken from each chairman's narrative since 1962. The samples were taken from the same place (second and fourth paragraphs) from each report. A syllable count and sentence length computation was then conducted for each paragraph. The results of each passage were double checked by the original researcher, and then samples were verified by an external checker. There was 99% agreement.

TABLE I

ANALYSIS OF READING EASE SCORES OF CHAIRMAN'S NARRATIVES OF ROTHMANS OF PALL MALL (MALAYSIA) BERHAD 1962-2009

Reading ease score	Description of style	Typical magazine	Number of chairman's narratives in each category	% of chairman's narratives in each category	Estimated % Malaysian employed persons able to read
0—30	Very difficult	Scientific	13	27	9
30-50	Difficult	Academic	27	56	17
50—60	Fairly Difficult	Quality	8	17	20
60-70	Standard	Digests	0	0	56
70—80	Fairly Easy	Slick Fiction	0	0	58
80—90	Easy	Pulp Fiction	0	0	72
90-100	Very Easy	Comics	0	0	84.5
			48	100	

Source: Adapted[28]

#### IV. RESULTS

Table I shows that of the 48 chairman's narratives, 13 were very difficult to read, 27 difficult and 8 fairly difficult.

The mean was 36.7 (difficult) with the distribution spread being from 56 (standard) to 15 (very difficult). The standard deviation was 11.3. Hypothesis I is therefore partially supported — these annual corporate reports were difficult to read over the last thirty years. Only about half the population would be educated to a level where they could read them (see Table I)<sup>4</sup>. This study does not, however, support the view that corporate readability was very difficult. Indeed, this series of corporate reports seems easier to read than the prior research suggested. The relationship between readability and time, as expressed by Hypothesis 2, was tested using simple linear regression. This showed a correlation coefficient of 0.106 which (using a two-tailed test with 47 degrees of freedom) is not significant at the 5% or 10% level. Rather, the graph shows a gradual upward trend in readability over the years (see Fig. 1 for the regression coefficient).

##### A. Statistical Analysis of the Results

The possible explanatory variables which might affect the independent variable of readability were examined in two stages. Firstly, each causal variable was tested on a direct one-to one comparison with readability, using the established techniques of simple linear regression (e.g., [52]-[54]). Then a Multiple Regression computer package was run.

Turnover, return on capital employed and the net profit ratio and number of statements were tested using simple linear regression (see Table II). The results obtained only support hypothesis 3A but failed to support hypothesis 3B (return on capital employed) that readability was positively correlated to financial performance. However, both variables show positive correlation and net profit to sales ratio (Hypothesis 3A) was significant at the 5% level.

As Table II shows, hypothesis 4A, that turnover was negatively correlated with readability, was not supported at the 5% level, (i.e., as Rothmans grew its corporate readability increased). However, hypothesis 4B, that readability of the chairman's narratives was negatively correlated with the number of financial statements, was supported at the 5% level.

The four qualitative variables (change of status, change of operation, merger and change of chairman) were tested using

<sup>4</sup>Based on 10.9 million of employed persons in Malaysia (in 2009) according to Malaysian Economic Report, 2010.

an independent two-sample test.<sup>5</sup> The results are outlined in Table III. The statistical evidence relating to the impact of different chairmen (hypotheses 5) upon readability was inconclusive (see Table III). Of the six comparisons, only one is significant at the 10% level. Chairman C appears significantly harder to read than D. However, five out of the six comparisons are not significant.

For hypotheses 6, 7 and 8, all were not supported at the 5% level. However, the results show that the chairman's narratives of Rothmans as a listed company were easier to read than when the company was unlisted. When the operation of Rothman of Pall Mall (Singapore) Ltd was separated from Rothman of Pall Mall (Malaysia) Ltd, the chairman's narratives also become simpler to read. The same applies when Rothman of Pall Mall (Malaysia) Berhad was merged with Malaysian Tobacco Company, the chairman's narratives seemed easier to read than before. It probably represents a tightening up of financial reporting before the company submitted its annual reports for public's viewing in December 1975. Also, when the company's operation was limited in Malaysia only, the chairman probably can focus specifically its review of business operation, resulting in a clearer and simpler composition of its narrative passage. Also, when the merger activity was undertaken, a simpler message was put across for a wider audience to project the new image of the business entity.

Simple statistical tests thus supported Hypotheses 1, 3A, 4B, did not support Hypotheses 2 and 3B, 4A, 6, 7 and 8, and were inconclusive on Hypothesis 5.

<sup>5</sup>Because of the small sample sizes involved, student 't' distribution was used. An analysis of variances, which supported the validity of using the t' tests, was performed first [54]. Simple linear regression was used to confirm the results and determine the direction of any differences.

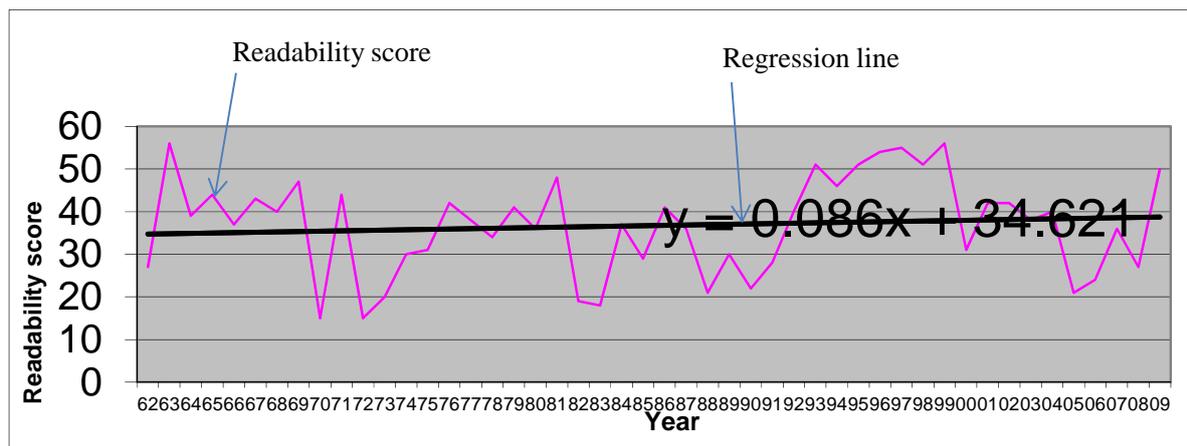


Fig. 1 Regression Line of Readability Score over Time

TABLE II  
SUMMARY OF THE RESULTS OF SIMPLE LINEAR REGRESSION ON THE CORRELATION BETWEEN INDEPENDENT VARIABLES AND THE READABILITY OF THE CHAIRMAN'S NARRATIVES OF ROTHMANS OF PALL MALL (MALAYSIA) BERHAD 1962-2009

Independent variable	r value	Tail test	Significance level (46 degrees freedom)
Turnover	0.111	2	0.467
Return on capital employed	0.230	2	0.116
No. of statements	-0.291**	2	0.045
Net profit/ sales ratio	0.326**	2	0.029

\*\*Significant at the 0.05 level.

Overall the results showed a gradual upward trend in readability over the years and show a positive correlation between readability and one of the independent variables tested, namely, net profit to sales ratio and time. However, one other variable, that is, the number of financial statements shows a negative correlation with readability level, meaning that as the firm expands, it becomes more complex and efficient. This more complex business environment has been reflected in the increased difficulty of the corporate reports. In an attempt to eliminate intercorrelations between the independent variables and to provide further statistical evidence, multiple regression analysis was carried out [55]-[58]. There were nine independent variables (time, operating profit/sales, return on capital employed, turnover, legal status, number of financial statements, change in operation, change in reporting entity, chairman) with readability as the dependent variable.

Unfortunately due to severe problems of multicollinearity, identified by a correlation matrix, it is proved impossible to obtain reliable individual regression coefficients. The small sample size also impeded the chances of obtaining statistically significant results. These technical problems meant that the multiple regression model did not give added support to the simple statistical tests.

#### V. SUMMARY, LIMITATIONS AND IMPLICATIONS

This research has examined the readability of the chairman's narratives of a Malaysian company from 1962 to 2009. Its main aims were to throw further light on the trend of

readability over time, and to explore any possible factors affecting that readability.

Previous research, which had implied that corporate reports had remained difficult to read throughout the period, was not fully supported. On the contrary, this study also demonstrated that in the particular firm studied readability had improved gradually (albeit insignificant) from 1962 to 2009.

Possible explanatory variables which might have contributed to this gradual increase in readability level were tested using simple statistical techniques. Overall there were clear correlations between readability and some of the variables tested, especially net profit to sales ratio and number of financial statements. It shows that as profitability increased, readability also increased. On the other hand, when the number of financial statements increased, readability level seemed to decrease. This is consistent with the view that the company's corporate reporting became more complex, reflecting its business environment, and the sophistication of its user groups. There was also a slight increase in readability, before and after the period 1974-75, which seemed to be associated with the firm becoming a listed company.

When looking at the results (see Tables II and III), it is important to bear in mind the limitations of the Flesch index and of the one-firm longitudinal study. The Flesch index mainly focused on syntactical complexity and word features. Nonwriting style features such as the content, the background of the reader or the format of the report are not quantified [59], [42]. This is particularly important with corporate reports as more attention is increasingly being devoted to presentational

aspects such as layout, diagrams and photographs [60]. Currently, though, there is no recognised method of assessing their impact upon readability. One of the advantages of the

chairman's section of the report is that these presentational considerations are minimised.

TABLE III  
SUMMARY OF THE RESULTS OF STUDENT 'T' TESTS ON THE EFFECT OF THE NON-QUANTITATIVE INDEPENDENT VARIABLES UPON THE READABILITY OF THE CHAIRMAN'S NARRATIVES OF ROTHMANS OF PALL MALL (MALAYSIA) BERHAD 1962-2009

<i>Variable Examined</i>	<i>Degree of Freedom</i>	<i>Result</i>	<i>Tail</i>	<i>Significance Level</i>
Change in operation	30	-0.194	2	0.847
Change in reporting entity(merger)	46	-0.089	2	0.929
Change of status	46	-0.583	2	0.563
Chairmen:				
A and B	14	0.843	2	0.413
A and C	18	1.00	2	0.331
A and D	16	-0.070	2	0.945
B and C	28	0.094	2	0.926
B and D	26	-1.588	2	0.124
C and D	30	-1.855*	2	0.069

\*Significance at the 0.10 level

Some researchers have suggested that more emphasis should be given on understanding accounting in the context in which it operates [61]. In particular, many researchers proposed that future research should employ the longitudinal study and the case study [62]-[64]. This study adopts both techniques. Several researchers opined that longitudinal studies allow a deeper study of the variables than cross-section research [62], [65]. Indeed Wail and Williams opine that temporal studies are the only ones which can give a true picture of cause and effect over time [66]. Case studies have been augmented as providing 'a firmer basis for our modelling theory-building and hypothesis formation activities'; as enriching our understanding of specific, real life situations; and as providing insights into accounting practice [62], [67], [68].

However, there are some criticisms that have been put forth on case studies. Do they have external validity, and in particular are the findings generalisable? [69]. Yin asserts that no one case, or set of cases, will deal with this problem [67]. Veritably for any one case some findings will be generalisable, and others will not [67], [70]. The benefit of the Rothmans case study is its possible insights into the nature of readability, and into the factors that may influence it. Black and Champion state that it is only through the accumulation of findings from other studies of this sort that statements can be generated that have little or no exception [71]. It is therefore hoped that this research, by investigating the temporal aspects of readability and of possible influences upon that readability, will start this process. However, its findings like those of any case study may not be generalisable universally.

This research has investigated for the first time readability over time in a particular firm in Malaysia. As such it is an exploratory study and its findings may or may not be generalisable to other firms. The insight that it gives into the nature of, and influences upon readability within one particular firm will, it is hoped, prompt further research into other firms. This will enable a clear picture of the trend of readability over time and of factors influencing readability to

be established.

Finally, the results of this paper may perhaps encourage more attention to the problems of effective communication. Throughout the recent past, the accounting profession has concentrated upon comparability and uniformity aiming to 'narrow the areas of difference and variety in accounting practice' [72], [73]. At the same time this study suggests that the readability of the corporate report has improved marginally. In order to avoid a serious communication breakdown between the providers and users of accounting information, standardisation must be accompanied by more understandable, readable accounts. If this does not happen, and corporate reports remain largely unreadable, they will remain largely unread.

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